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INTRODUCTION

This publication is Supplement No. 1 to CINCPAC-CINCPAC Bulletin No. 122-44, NANPO SHOTO (Volume One). The information contained herein, pertaining to IWO Jima only, is divided into two parts.

Part I is a revised estimate of enemy defenses on IWO Jima. Enclosure (A), "Revised Map of Military Installations and Troop Dispositions as of 3 December 1944", is a folded enclosure of this report. (FOR ERRATA NOTE SEE PAGE ELEVEN.)

Part II contains a report on Nearshore, Beach and Soil Conditions of IWO Jima. Enclosure (B) consists of approximate profiles of nearshore bottom on the west side of IWO Jima and a map locating the areas discussed herein. This material was prepared by Engineering and Terrain Intelligence Team, U.S. Geological Survey, presently attached to JICPOA.

## PART I

### MILITARY SURVEY

#### FORTIFICATIONS

##### Observed Defenses -- (as derived from study of photos)

- 4 CD
- 24 DP
- 5 empty DP positions
- 44 auto AA (twin mount)
- 33 auto AA (single mount)
- 39 pillboxes
- 152 MG positions
- 4 open artillery positions
- 13 covered artillery positions
- 4 covered artillery positions under construction
- 6 probable rocket launcher positions

##### Reported Defenses -- (as derived from captured documents and tables of equipment of assigned defense units)

- 12 15/24 cm mortars (most probably 24 cm)
- 4 15 cm CD
- 4 14 cm CD
- 14 12 cm DP
- 6 90 mm or 81 mm mortars
- 10 8 cm DP
- 9 75 mm mountain guns
- 8 75 mm field guns
- 30 70 mm howitzers (81 mm mortars may be substituted for 70 mm howitzers)
- 18 37 mm antitank guns
- 24-36 37 or 47 mm antitank guns
- 54 twin mount 25 mm auto AA
- 138 7.7 mm heavy machine guns

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340 7.7 mm light machine guns  
4 flame throwers  
20 medium tanks  
10 light tanks  
6 searchlights  
13,500 personnel (for detailed order of  
battle information, see table on enclosed  
map.)

Comparison of the aerial photographs taken on 2 September 1944 with those of 3 December 1944 indicates that the IWO Jima garrison is carrying out an intensive construction program. This program includes the strengthening of the infantry positions, construction of covered artillery positions, and the installation of concrete pillboxes or block-houses along the beach. The latter may possibly be for mobile artillery to be used for antibat missions. A recent rearrangement of the dual-purpose guns was effected by moving the heavier guns from the south end of the island to the north end. There are no indications that the garrison has been reinforced, and the general plan for defense appears to remain unchanged.

Mines have been planted and tank and boat obstacles have been constructed extensively along the main beaches and inland, particularly in the southern part of the island. Barbed wire entanglements have been observed only in a few places; however, it has been reported that a quantity of wire was on hand in April 1944.

Infantry Defenses. The heaviest concentration of infantry defenses on IWO Jima is in the southern half of the island in the vicinity of Airfields No. 1 and No. 2 and the good beaches in that area. The northern half with its rough coast and unfavorable landing areas has less heavy entrenchments, the defenses being confined to works of limited extent at the narrow beach at the north end of the island and outposts elsewhere along the rugged coastline.

Air Defenses. Heavy concentrations of automatic anti-aircraft guns are located in the area of the two operative airfields. The concentrations of dual-purpose guns (8 cm and 12 cm) are between the airfields and north of Airfield No. 2.

In addition to the 25 mm twin-mount automatic anti-aircraft listed in the tabulation of reported weapons, the automatic antiaircraft batteries appear to consist of single-mount 25 mm and 13 mm, of usual type. There is also the probability that 20 mm aircraft automatic guns have been taken from planes and adapted, on improvised ground mounts, for antiaircraft missions. This has been observed to be a common practice of the Japanese in augmenting the antiaircraft defenses of their airfields or seaplane bases.

Many of the automatic antiaircraft batteries, though installed primarily for antiaircraft defense, probably may be utilized against personnel and landing craft.

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**COAST DEFENSES.** Four coast defense guns and 24 dual-purpose guns have been observed. Four other coast defense guns have been reported, but they have not been detected in the aerial photographs taken up to 3 December 1944. Large emplacements, classified as covered artillery emplacements, have been constructed along the beach in the southern portion of the island. Some of these are possibly casemated coast defense guns. However, many bear striking resemblance to concrete positions found on SAIPAN which housed field guns employed in antiboat and coast defense missions.

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ESTIMATED PLAN OF DEFENSE

**General.** A study of the organization of the ground on IWO JIMA indicates that the Japanese garrison there is applying the lessons learned by their ill-fated garrisons on islands already occupied by us. Their beach defenses are organized in depth, and the tactical localities are covered by extensive antitank defenses and by what appears to be a carefully worked out "fire net". The fire net, so-called by the Japanese, combines the fire of machine guns laid on final protective lines with that of the light artillery of the infantry units, similarly sited to lay down flanking fire upon the beaches.

There is no evidence to indicate a massing of artillery beyond that of batteries. Past experience has indicated that the Japanese infantry is reluctant to forego close support by the artillery in favor of general support by massed guns.

Of especial note is the fact that the field works are adequate for only four out of the nine infantry battalions known to be on the island. The five battalions in reserve therefore are available for counterattack, probably locally as soon as a landing has succeeded, and in a general all-cut counterattack which should take place D-night if the doctrine laid down in documents captured on PELELIU is followed.

Above all it is to be noted that the Japanese are learning how to fight defensively and how to get away from the rigid perimeter defense that they had so fixedly adhered to until recently. They are beginning to understand the advantages of an active, fluid defense and the uselessness of beating against our well established beachheads. In consequence it may be expected that if their plans for counterattack fail to dislodge a landing, the remnants will fall back into the high ground in the center of the island and carry out the "cornered rat" defense encountered on PELELIU.

Their antitank tactics and their antitank guns thus far have proved inadequate. The extensive use of antitank mines and traps, combined with "close quarter attack units" using hand-placed antitank charges, and the use of field and mountain guns in antitank roles, are their present solution to this problem. It is probable that the covered artillery emplacements, which are located at the rear of the flanks of many of the combat groups, contain 37 or 47 mm antitank guns. Likewise, infiltration probably will be undertaken by raiding units with the mission of knocking out command posts and communications, and to destroy artillery, tanks, and mortars with explosives. Such tactics may be supplemented by counterlandings from landing craft or by swimmers. Such landings have been planned in other areas, to coincide with the landing of our last wave or to occur during dusk or early darkness.

Disposition as determined from the Organization of the Ground. It appears that IWO JIMA probably has been divided into four Defense Sectors, as shown on the accompanying Military Installations and Troop Dispositions Map. One battalion of the reported garrison appears to be committed

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to defensive positions in each of the four sectors, with the remaining five battalions held in mobile reserve probably in the north end of the island in the vicinity of the Headquarters Area.

As previously reported, the principal concentration of entrenched forces is in the southern end of the island where both east and west coasts provide unbroken landing beaches approximately 4,000 yards in length. These positions, consisting of pillboxes and entrenched rifle positions, are organized in depth and provide all-around defense. They appear to have been extended and strengthened since the report based upon the aerial photographs of 2 September 1944. However, this should not be construed to indicate a reinforcement of the garrison forces. The added positions appear to be alternate and secondary positions for the three battalions whose primary positions were previously observed in these Sectors. Definite gaps between units stand out particularly in the beach area, but these appear to be coverable by the fire of automatic weapons and rifle fire from squad positions. Also, the photographs of later date reveal that some machine gun positions formerly reported as open emplacements have since been pillboxed. Still more positions no doubt will be covered and strengthened as time permits. The positions in depth are located so as to be able to deliver fire at the water's edge. Covered emplacements for mobile artillery and antiboat guns dispersed along the high ground back from the beaches appear to have been increased in number. Numerous covered artillery emplacements have been constructed and are under construction at the beach. Some of these positions are dispersed among the infantry positions and some are situated at the beach around the crater, sited to fire flanking fire along the main beaches.

The positions in the south end of the island have been strengthened by the extensive use of antitank and beach mines and obstacles. Minefields appear to have been laid along the south beaches forward of the troop positions. Mines and antitank ditches have been used to close gaps between units, and to deny approaches to the interior and rear of the positions.

In the north end of the island where the coastline is rugged and broken by steep rocky cliffs, there apparently has been little or no change in the infantry positions. The beach at the extreme north and flanked on both sides by rocky cliffs still contains the only visible concentration of troops found in the north end of the island. The defenses of this beach appear to be positions for approximately one battalion deployed three companies abreast along the beach, strengthened by automatic weapons emplaced in pillboxes and prepared positions on the embankment overlooking the beach and able to deliver fire onto the beach. The rocky coastline flanking this beach on both sides still appears relatively free of defensive installations. There are no indications of strengthening or extending the previously reported positions, which appeared to have been prepared for small outpost or machine gun units covering beaches and small draws which penetrate the cliffs. This is probably due to the fact

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that the rugged terrain provides natural firing positions for the riflemen committed to the beach defense in these sectors.

Reserve forces of the reported garrison consisting of approximately five battalions probably are held in a mobile status, to be shifted into sectors under attack for the purpose of reinforcement and counterattack.

Description of Defense Areas. Area A. This area covers the southern flank of both the vulnerable landing areas on the island. The battalion defending this sector has constructed a well developed center of resistance with the strong points designed for all round defense and connected by a network of communication trenches.

One company has taken up positions around the north side of the crater and along the beach on the northeast and northwest sides of the crater. Automatic weapons of the units of this company on the beach are emplaced in pillboxes and are sited so as to be able to fire either to the south or down the good beaches to lay down mutually supporting enfilade fire in front of the adjoining company.

Within this strongpoint, below the crater on the northwestern side, are six clover leaf shaped emplacements. These are probably 29cm (8in.) rocket launchers, though they may be for 150 mm mortars.

Another company, organized with two platoons forward and one in support, is entrenched along the east beach in the north end of Area A. The terrain immediately behind the east beach rises gently to the crest. The support platoon and automatic weapons are emplaced on this slope behind the beach positions and can deliver fire onto the beach.

A third company is organized along the west beach with three platoons abreast. The bulk of the company appears to be emplaced in a line of defense along the commanding ground which rises abruptly just inland from the beach. However, squad positions sited in depth, but not connected, have been prepared in the northern part of the company area. These positions appear to provide the flank defense for the north flank of the battalion sector's western beach. The position of this company is connected with the other units of the area by a network of communication trenches.

Area B. This area occupies the northern three-fourths of the western beach area and appears to be defended by a battalion with three companies abreast. Each company is organized in depth, but they do not appear to have placed as much emphasis on all-around defense as have the units in Areas A and C.

The beach in the southernmost company's defensive sector, is narrow, and the terrain rises abruptly inland to a steep embankment. This company is deployed with two platoons entrenched at the beach and the third platoon entrenched on the bluff overlooking the beach behind the southernmost platoon. From these positions the third platoon is able to deliver

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flanking fire through the gap between platoons.

In the northern end of Area B the beach becomes much wider and the terrain inland from the beach rises much less abruptly. This part of the area is defended by two companies of the battalion, each deployed with two platoons forward and one platoon in support. The forward platoons have prepared entrenched positions in depth along the beach and on the gentle slope behind the beach. The reserve platoon of each company has prepared supporting positions along the bluff overlooking the beach. These entrenchments apparently contain the principal automatic firepower. They are situated so as to be able to deliver fire onto the beach. There is a possibility that additional infantry from the garrison reserve has been committed to the defenses in this area.

Area C. This area occupies the northern two-thirds of the eastern beach area and appears to be defended by a battalion with three companies abreast. Each strong point is organized in depth with two platoons forward and one platoon in support, and providing allaround defense for each company as well as for the battalion. The gaps between the battalion areas and between the companies within the area are covered by automatic weapons and small units entrenched to cover the gaps with rifle fire. The support platoons of each company are entrenched on the slope behind the forward platoons and located so as to be able either to deliver fire at the water's edge or to counterattack to assist the forward platoons. The extending and strengthening of positions observed in recent photographs has been most conspicuous in this area. Alternate and secondary positions have been prepared. Covered artillery emplacements have been installed on the slope back of the rifle positions. A program is in progress for the construction of concrete positions along the beach which probably will contain mobile artillery for antboat missions.

Area D. This area comprises the entire northern part of the island. One battalion appears to be committed to the defense of this section and has its three companies in line along the rough coastline of precipitous cliffs and bluffs which are cut by one narrow beach, at the northern end of the island. The one narrow beach has rough inland approaches which rise to a bluff a few hundred yards from the waters edge. This beach is defended by an estimated company in field works at the beaches, backed by additional positions inland on the bluff. The latter positions probably are largely for the battalion supporting weapons. The two other companies, flanking the aforementioned, apparently are divided into small detachments covering draws and ravines that cut up through the cliffs extending on around the island from the northern beach.

Reserve Area. Documentary evidence (dated April 1944) indicated the location of the reserve area as shown on the map, and in all probability the garrison reserve (of five battalions) is still located in this area in the center of the north part of the island. This reserve force probably has been retained near the Headquarters area and under

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Headquarters control, to be used for counterattack and reinforcement in areas against which an assault is launched. It is estimated that from this location the reserves can reach any part of the island on foot within one hour. However the presence of the many revetments for trucks and other vehicles indicates that motor transportation may be available to the reserve forces. Since on several islands recently occupied by us it was the plan of the Japanese garrison to launch an all out counterattack on D-night, before our forces have had time to thoroughly organize their beachhead, it is probable that on this island also the Japanese plan to use their reserve, similarly.

Caves. It appears that the enemy has taken full advantage of the suitability of the rugged terrain for the preparations of caves and other semi-natural shelters for the protection of personnel, stores, and ammunition against aerial and naval bombardment. These shelters or caves are dispersed throughout the north end of the island. Some are isolated or appear to be related to an isolated unit or installation. Others are concentrated near building and barracks areas. There are three notable concentrations of caves as shown on the accompanying map.

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TANK AND BEACH OBSTACLES

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General. In the southern and more level end of the island, tank and beach mines and obstacles have been employed extensively. The location of these defenses is shown on Enclosure (A) by overprinting in red.

In addition to the construction of tank obstacles along the beach and approaches inland, the garrison has constructed antitank defenses between the two operative air strips. This second line of tank traps appears intended to limit the inland penetration of our tanks and to serve as a barrier from behind which counterattacks may be launched.

Antitank Ditches and Holes. V-type antitank ditches have been prepared throughout the level portion of the island, at the beach, and inland covering the avenues of tank approach to the more vital installations. (For location and distribution of tank ditches see Enclosure (A)). These obstacles often consist of a line of unconnected, short segments of trench.

In some places inland from the beach, tank ditches have been prepared in a broken line, the length of the segments of ditch being 20-30 feet and the interval between ditches being approximately 20 feet. In most places where this type of ditch has been resorted to, there also appear holes approximately 10 feet in diameter, located sometimes in the interval between the short ditches, and at other times in a staggered pattern forward of or behind the interval between ditches. It may be that these holes have been blasted out to close gaps in the barrier, or preparatory to the lengthening of the ditches. However, it is also possible that immediately prior to a threatened landing the enemy will bury perhaps as heavy as 500 lb. bombs, nose up, in these holes as improvised mines.

Holes as described in the preceding paragraph also are observed to be dug, or blasted, in a continuous line, and not as a part of an intermittent ditch system. Located principally in the area northwest of the East Boat Basin, approximately 500 yards inland, these may be either the preparations for a complete chain of inverted bomb mines or the result of initial blasting to simplify the construction of a tank ditch. Short lines of holes of this type also are found in connection with two sections of antitank ditch on the eastern beach, about 400 yards southwest of the East Boat Basin.

Recently dated captured documents on the defense of other islands reveal that instructions had been issued for the placing of bombs, nose up, fused and armed, during the night before the landing; the timing being designed to prevent destruction of the minefield by our bombardment. These empty holes on IWO JIMA may well be the preparations for such minefields.

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Throughout the island there are also natural barriers to tanks provided by terrain features, some of which have been rendered more effective by digging. These are considered natural barriers and are not covered in this report.

Gasoline Drums. Partially buried gasoline drums are observed at the water's edge on both the east and west beaches in the southwestern part of the island. These are placed in systematic design and regularly spaced, with intervals of 15-20 yards between drums. On the east beach the minefield is generally two drums deep. However, on the west beach the depth varies from one to three drums, depending presumably on the suitability for landing on the particular section of beach.

This type of obstacle presents a number of possibilities. CINCPAC-CINCPOA Translations No. 6, 27 November 1944, pages 69, 70, 71, 72, contain detailed instruction to the enemy for employing gasoline to check landing forces. The drums on IWO JIMA may be wired for electrical ignition with the intention either of the burning gasoline running out over the water to check landing craft, or of ignition at the moment the amphibious tractors or tanks reach land to make a wall of fire before them. An underground observation post (indicated on the overlay by an open triangle) was observed on the west beach. This observation post is located in the center of the greatest concentration of drums, has a view of the entire west beach, and appears to have no particular relationship to the other ground defenses in the area. It is possible that this position contains the control system for the various circuits that will ignite the drums.

There is also the possibility that these "drum-mines" be equipped with pull-type detonators, with attached trip wires, which would ignite the drums when either personnel or tanks came in contact with the wire.

Small Holes. There are fields of small holes in systematic patterns located on the east beach and at other places inland. These holes are approximately three feet in diameter and, although empty, are suitable for burying a number of types of mines, antitank or antipersonnel, including inverted 150 lb. bombs placed nose up, fused, and armed. Inland, holes of this size can be found along the shoulders of roads in the area of the southern airfield. No great number of these can be seen, but the use of mines, especially those improvised from bombs emplaced in the shoulders of roads, is standard Japanese practice, and they can be expected to be encountered at intervals through the island.

Wire. Barbed wire entanglements are visible along some of the smaller beaches in the northern section of the island. It is not possible to say, judging from the available photos, whether or not wire has been erected along the two main (east and west) beaches, although there are some shadowy indications that might be low wire or merely high-water marks.

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Landing Craft. Landing craft are available at nearby islands for possible use in attempts to reinforce this island. Distances to nearby islands would stretch the cruising range of the Japanese large landing barge, but numerous fishing vessels and other small seagoing vessels are available in this string of islands. The capacity of this large type landing barge is 70 men.

MUKO JIMA (CV6-108P-2 Sept. 1944)

3 large type barges

IWO JIMA (VD5-7C-11 Dec. 1944-7A)

East Boat Yard

12 large type landing barges

South of East Boat Yard

3 ISN (264'0A) wrecked on beach

West Boat Yard

7 large type barges - 6 in revettments

4 large type barges probable in covered shelters

North of West Boat Yard

2 large type barges

HAHA JIMA (VD5-9J-11 Dec. 1944)

31 large type barges

CHICHI JIMA

70 large type barges approx.

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IMPORTANT ERRATA NOTE

In the table of reported defenses of Enclosure (A) to Part I - "Revised Map of Military Installations and Troop Dispositions on IWO JIMA as of 3 December 1944" - the following corrections should be made:

For 109th Division (2nd Mixed Brigade)

Under 70 mm Howitzer, change 12 to read 24

Under 7.7 mm HMG, change 36 to read 72

For 26th Tank Regiment

Under Medium Tanks, change 20 to read 30.

Change totals accordingly.

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PART II

NEARSHORE, BEACH, AND SOIL CONDITIONS

IWO JIMA

NEARSHORE CONDITIONS OFF THE MAIN BEACHES OF IWO JIMA

The two significant beaches of IWO Jima in the NANPO SHOTO lie on either side of the tapering southwestern peninsula. The island rises rather abruptly from the surrounding sea floor. In general the nearshore slope off both beaches is mild to gentle (1 in 100 to 1 in 60, steepening southward along each beach). Further out the bottom has a moderately steep slope (1 in 15 to 1 in 20) to considerable depths.

In detail the nearshore slope shows some irregularities. The accompanying approximate profiles of the nearshore bottom off the west beach show an offshore bar in three out of five cases and a pronounced shelf in the other two. Wave patterns indicate that the bar is fairly continuous along parts of this beach. The approximate course of the bar is shown on the accompanying map. The least depth (at lowest low water) over the bar ranges from six to 18 feet, 12 or 13 feet being average. There appear to be two high points, perhaps with six foot depths, one off the north end (see Range A) and one off the south end of the beach. Outside the bar the steep offshore slope begins at about 20 foot depths. Inside the bar is a shallow trough. Inshore from the trough the bottom slope is 1 in 40 to 1 in 30, being steeper to the south. The slope of the beach up to the high water line is probably about the same; above that the slope is considerably flatter but in places the high water line is marked by a one to three foot bank of sand. Near the north end of the beach, banks and spits of loose sand occasionally form at or just under the water level, interrupting the bottom slope. These are transitory features; moreover, there is every reason to believe that the main offshore bar also shifts constantly. Hence, details on charts and profiles may not remain long in position.

In general the east beach resembles the west beach, and an offshore bar is present along parts of it. However, the mild nearshore slope continues out to depths of 30 to 35 feet before breaking off, and there may be a second bar near the edge of this shelf. In addition the three rocks called FUTATSU NE obstruct the beach one third of the distance from its south end. These are shown on all maps and charts. The bar off the northeast end of the beach is irregular and probably rocky and continues northeast to the rocky point 3,000 feet east of the northeast end of the beach. Except for this bar and the rocks, the offshore details may be expected to shift.

Except near FUTATSU NE and off the extreme ends of the beaches, the bottom is fine sand, fairly loose though generally not as loose as the sand above the high water line. The sand is firmest after heavy storms. It is least firm on the crests of bars or in sand banks and spits, especially

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where these have just formed or are shifting rapidly.

#### BEACH CONDITIONS OF IWO JIMA

Soil Texture. Material of sand size, coarser than .05 mm. and largely finer than 1 mm. The centers of the beaches are finer textured than the ends. The south end near SURIBACHI Yama has a narrow, gravelly beach.

Soil Material. The sand is composed of fragmental volcanic material, probably disintegrated lava with some ash. A rather easily abraded material.

Physical Properties. Loose, structureless sand. Poorly graded (narrow size distribution range). Very well drained; very high permeability; very low moisture retention. Subject to wind erosion and to water erosion in heavy rains. Easily transported and eroded by waves and currents.

Trafficability. The trafficability of this beach soil is low for wheeled vehicles, especially when it is dry. Because of lack of fines (binder) and poor grading, trafficability is only slightly better when the sand is wet. It also would be difficult and tiring to move over it rapidly on foot. Movement for tracked vehicles should be easier. It is recommended that mats, such as wire fence or light landing mat, be used for moving vehicles ashore and for temporary roads.

Engineering Properties. (Evaluations in accordance with Army Aviation Engineers Technical Handbook #5-255).

Classification: Poorly graded sand (SP aviation engineers; A-3 public roads administration).

Dry weight per cubic foot: fairly high (100 to 110 lbs.).

Void ratio: fairly low (.45 to .55).

Porosity: fairly low (30 to 35%).

Moisture retention against gravity: low (less than 8%).

Bearing ratio: (load supporting power in relation to crushed stone; crushed stone supporting power equals 100): 10 to 20.

Compaction and Stabilization. Can be compacted best by disk and ponding. Must be confined to serve as subgrade or foundation. Addition of binder (clay and fine sand) should aid in stabilizing this material. If properly compacted and confined should have fair load-supporting power but for best results gravel or crushed rock should be added. A bituminous binder might have a weak, but temporarily adequate, surface.

Excavation. Very easily dug by hand, but excavations will not retain steep walls without support because of the looseness and coarseness of the sand. In places along the beach, ledges of hard rock may be encountered, chiefly near ends.

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SOIL CONDITION INLAND FROM THE BEACH

The soil at higher inland locations is older, has weathered more and may be expected to contain more fines (binder). The amount of fines in the soil increases progressively from the beach inland, especially where there is much vegetation. The soil probably becomes more trafficable accordingly, although the major part of the central ridge of the island is somewhat sandy. The wide north end of the island is covered with clay and stony clay soils which are very variable in depth. Bare rock is exposed in many places, and in low, level places the soil may be as much as six to eight feet deep. A belt of this latter type of soil appears to extend about one third of the way down the central ridge. Some sand may be mixed with the surface soil of nearly the whole island as a result of wind erosion.

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HEADQUARTERS OF THE COMMANDER IN CHIEF

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A-2 XX Bomber Command, APO 493, New York - - - - -	2

(Continued Reverse Side)

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Adv Intell Off, ULITHI - - - -	130
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(For distribution, as appropriate, to CGAir FMFPac, ComMarFAirWest, ComASCU-RhibFor, ComCarTransRonPac, ComAirSoPac, ComAir7thFleet, ComAirNorSols, ComMar-Gil, ComFAirWest, ComFAirAlameda, ComFAirSeattle, ComFAirshipsPac, ComNATSPac, ComCarTasFors, ComEsCarFor, ComCarDivs, Carriers, CarAirGroups, CarSquadrons, Seaplane Tenders, FleetAirWings, Squadrons, MarAirWings, MarAirGroups, MarSquadrons, Bat-Cru Aviation Units, Nav-Air & Seaplane Bases, InterPronTWO).





# LEGEND

- COASTAL DEFENSE GUN
- DUAL PURPOSE GUN
- DUAL PURPOSE POSITION (EMPTY)
- AUTOMATIC AA GUN
- AUTOMATIC AA GUN (TWIN MOUNT)
- ARTILLERY EMPLACEMENT
- COVERED ARTILLERY EMPLACEMENT
- COVERED ARTILLERY EMPLACEMENT UNDER CONSTRUCTION
- PILLBOX
- MACHINE GUN
- RIFLE PIT
- RADAR
- SEARCHLIGHT
- UNDERGROUND ENTRANCE OR DUGOUT
- MAIN ROAD
- SECONDARY ROAD
- PERSONNEL TRENCH (COMMUNICATION OR FIRE)
- TRENCH WITH RIFLE PITS
- BUILDING
- ANTITANK TRENCH
- HOLES
- MINIFIELD OF PARTIALLY BURIED GASOLINE DRUMS
- FIELD OF SMALL HOLES (PROBABLY FOR INVERTED 63 kg. BOMBS)

8-12 CM DP  
2-8 CM DP  
17-25 MM TWIN MOUNT  
10-AUTO AA  
1-INF BN

UNDERGROUND OP

EXACT LOCATION OF HQ OR OF RESERVES NOT KNOWN.

2-15 CM CD  
5-12 CM DP  
4-8 CM DP  
12-25 MM TWIN MOUNT  
8-AUTO AA  
1-INF BN

2-14 CM OR 3-12 CM GUNS REPORTED TO BE HERE BUT CANNOT BE SEEN.

1-12 CM DP  
15-25 MM TWIN MOUNT  
9-AUTO AA  
1-INF BN

2-14 CM CD  
4-8 CM DP  
6-AUTO AA  
1-INF BN

PROBABLE 20cm ROCKET LAUNCHER POSITIONS OR POSSIBLE MORTAR POSITIONS.

REPORTED	1524mm Mortar	15cm C.A.	14cm C.D.	12cm C.D. or D.P.	90 or 81mm Mortar	75mm M.T. gun	70mm FIELD GUN	21mm AT GUN	AUTO AA 40mm TWIN M.T.	17mm HMG	12mm LMG	FLAME THROWER	MEDIUM TANK	LIGHT TANK	27mm AT GUN	STRENGTH				
2 <sup>nd</sup> MIXED BRIGADE (109 <sup>th</sup> DIV)																4,700				
145 <sup>th</sup> INF. REGT.				6	4	6	6		36	108						3,400				
26 <sup>th</sup> TANK REGT.													20	10		300				
MORTAR BN.	12															700				
TWO IND. AT BNS.										16					24	800				
GUARD FORCE (NAVY)			4	14	4			30								750				
ONE AA AIR DEF UNIT					6				10				2			250				
TWO AA AIR DEF UNITS								24	20				4			500				
AIR BASE PERSONNEL																500				
CONST. PERSONNEL																1,500				
59 <sup>th</sup> ANCH. BRANCH																25				
ADDITIONAL GUNS		4																		
TOTAL	12	4	4	14	6	10	9	8	18	18	54	102	340	4	20	10	6	24	36	13,500

OBSERVED										
CD		2	2							
DP				14	10					
AUTO AA							44	33		
TOTAL		2	2	14	10		44	33		

\* SOME OR ALL 70mm HOWITZERS MAY HAVE BEEN REPLACED WITH 81mm MORTARS.

MILITARY INSTALLATIONS AND ESTIMATED TROOP DISPOSITIONS OF

## IWO JIMA (SULPHUR ISLAND)

APPROXIMATE SCALE IN FEET

1000 0 1000 2000 3000

ENCLOSURE (A) OF SUPPLEMENT NO. 1 OF CINCPAC-CINCPOA BULLETIN 122-44

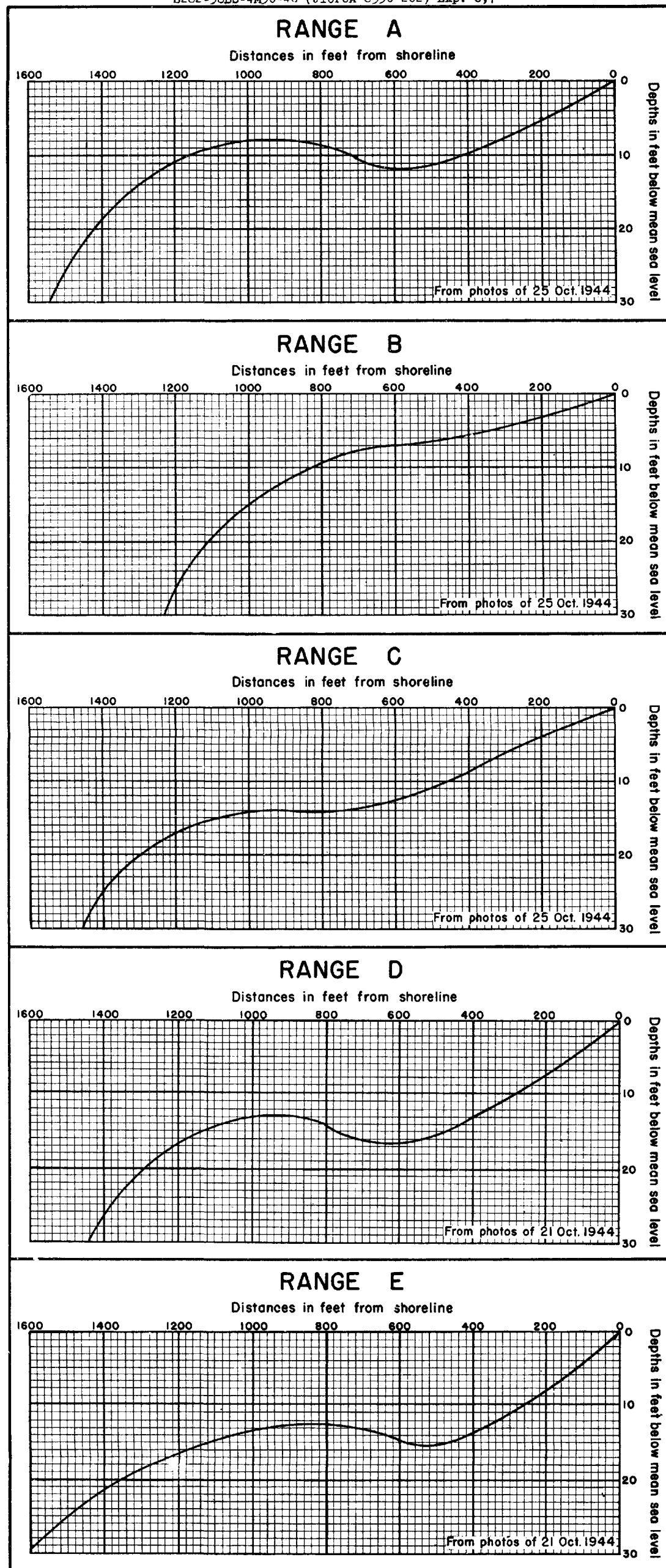
BASED ON STUDY OF AERIAL PHOTOGRAPHS FOR PERIOD 2 SEPT. 44 TO 3 DEC. 44

REPRODUCED BY 30TH ENGR. BASE TOP. BN, USAFPCB NO. 1375 FEBRUARY 1945



These profiles were constructed from aerial photographs of waves. As none of the pictures examined had satisfactory wave images off the east beach, no profiles could be constructed for that beach. In the absence of timed exposures, the relatively inaccurate wave period method was necessarily used, and the profiles can be considered rough approximations only. The location of the profiles is shown on the accompanying map. The pictures used were:

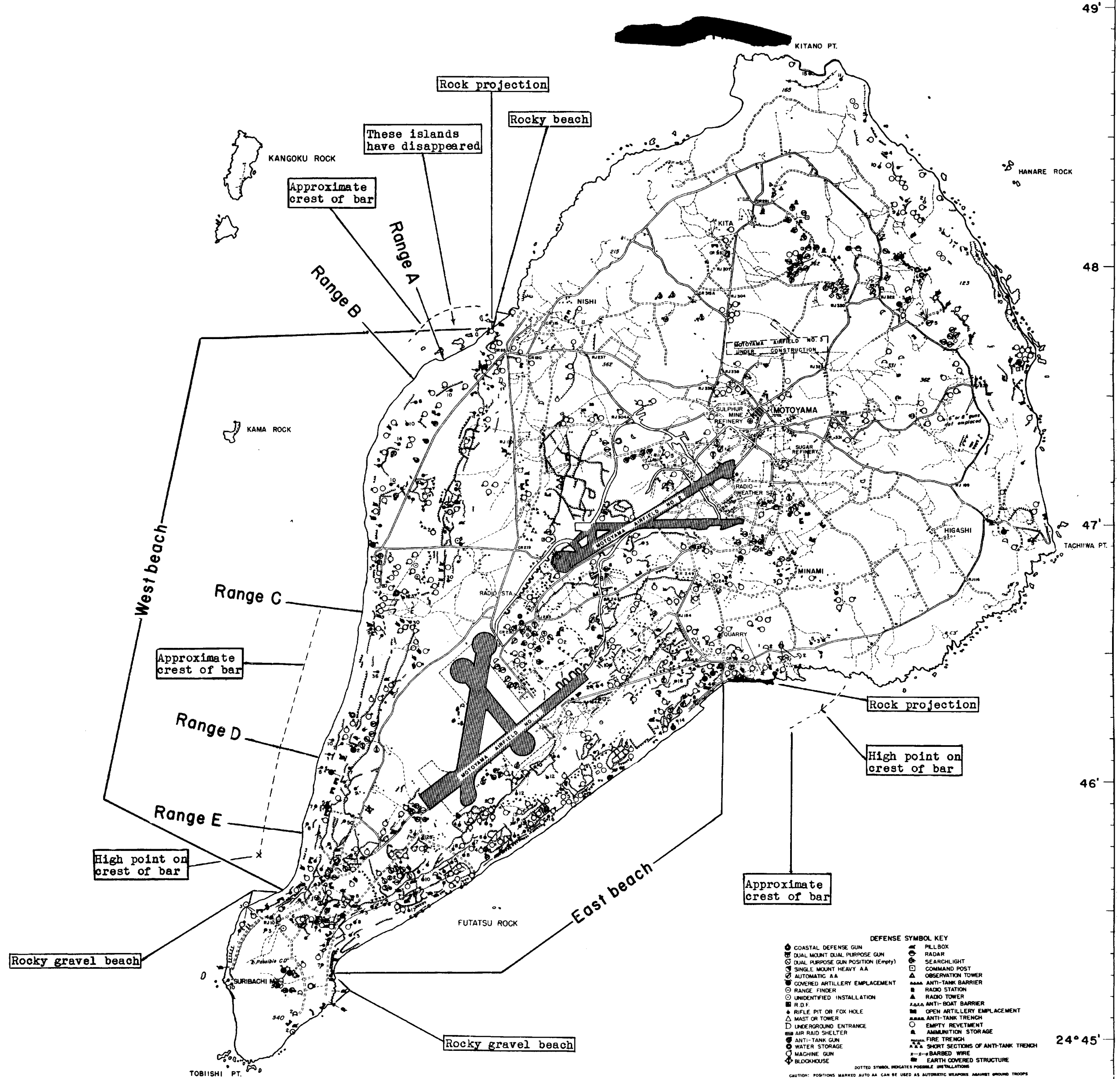
819BS-4M30-35-2-V (JICPOA-8419-187) Exp. 14(?)  
B518-819BS-4M30-40 (JICPOA-8528-200) Exp. 9,10  
B282-38BS-4M30-40 (JICPOA-8530-202) Exp. 6,7



## Nearshore, Beach, and Soil Conditions

### IWO JIMA

Enclosure (B) to Supplement No.1 to CINCPAC-CINCPMA Bulletin No.122-44. 10 January 1945



L-41209-8